

Message Text

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SUBJECT: PRELIMINARY OBSERVATIONS BY TAC TEAM AT HANNOVER
MACHINE TOOL EXHIBITION

1. THE FOLLOWING COMMENTS REPRESENT PRELIMINARY OBSERVATIONS BY GOVERNMENT TAC TEAM AT HANNOVER INTERNATIONAL MACHINE TOOL EXHIBITION. SINCE TIME HAS NOT PERMITTED MUCH OF LITERATURE COLLECTED AND INFORMATION CONTAINED IN NOTES TO BE FULLY ANALYZED, COMMENTS SET FORTH HEREIN MAY BE SUBJECT TO SUBSEQUENT MODIFICATION IN FINAL DETAILED REPORT TO BE MADE UPON RETURN OF TAC-GOVERNMENT TEAM TO WASHINGTON. BECAUSE OF THE PRELIMINARY NATURE OF THIS INFORMATION, IT IS REQUESTED THAT IT NOT BE DISSEMINATED AT THIS TIME TO INDUSTRY MEMBERS OF COMMERCE TECHNICAL ADVISORY COMMITTEE ON NUMERICAL CONTROLLED MACHINE TOOLS.

2. MOST SIGNIFICANT HIGHLIGHTS OF HANNOVER SHOW AS THEY MIGHT EFFECT U.S. BILATERAL AND INTERNATIONAL MULTILATERAL EXPORT CONTROLS WERE AS FOLLOWS:

A) EXTENSIVE USE IN BLOC MACHINE TOOL DISPLAYS (EAST GERMAN AND POLAND) OF SWEDISH SAAB MTC9 THREE AXIS, HARDWIRED CONTOURING NC UNIT WITH MINIMUM PROGRAMMABLE INCREMENT OF 0.001 MM (ONE MICRON).

B) DISPLAY OF SWEDISH SMT CNC UNIT ENTIRELY OF SWEDISH DESIGN AND
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CONSTRUCTION WITH TWELVE BIT, 4K MODULAR COMPUTER AND 0.001 MM RESO-

LUTION. SYSTEM BEING MARKETING THROUGHOUT EUROPE AND IN U.S.

C) AVAILABILITY FROM SWITZERLAND OF FULL THREE AXIS CONTOURING MILLING EQUIPMENT.

D) A REASONABLY COMPLETED LINE OF HIGH INTEGRITY NC MACHINE TOOLS CAPABLE OF CONTOURING APPLICATIONS FROM EAST GERMANY.

E) PRESENCE OF A CSSR TWO AXIS LATHE DISPLAY CONTROLLED BY CZECH CNC UTILIZING PDP 8M COMPUTER WITH FEEDBACK AND ADAPTIVE CONTROL FEATURES. WHILE SYSTEM RUDIMENTARY BY AMERICAN STANDARDS, ITS PRESENCE SUBSTANTIATES WHAT CASR TECHNICIANS TOLD TAC TEAM IN BRNO THAT CSSR UNDERTAKING EXTENSIVE RESEARCH IN CNC AREA AND INTEND TO MOVE IN THAT DIRECTION.

3. IN SUMMARY, EACH COUNTRY SURVEYED BY TAC TEAM DISPLAYED FOLLOWING ITEMS OF INTEREST:

A) USSR: DISPLAYED GENERAL PURPOSE MILLING AND TURNING MACHINES. NUMERICALLY CONTROLLED MACHINES WERE POINT TO POINT MEDIUM SIZE MILLS AND TWO AXIS CONTINUOUS PATH HORIZONTAL AND VERTICAL LATHES. ONE DISPLAY OF INTEREST WAS LARGE BRIDGE MILL WITH TRAVEL OF APPROXIMATELY TWENTY FEET AND USING HYDROSTATIC SLIDES. ALL CONTINUOUS PATH CONTROL SYSTEMS USED WITH USSR MACHINE TOOL DISPLAYS WERE OF WESTERN ORIGIN (BOSCH 800 WITH 0.002 MM RESOLUTION, AND ALCATEL TF SERIES WITH 0.005 MM RESOLUTION).

DDR: EXHIBITED WIDEST VARIETY OF NC EQUIPMENT WHICH ALL LOOKED GOOD. TOOL CHANGE MECHANISMS QUITE SOUND. MOST MILLS CONTROLLED BY KARL-MARX-STADT BNC-3 STRAIGHT LINE CONTROL SYSTEM. CONTINUOUS PATH EQUIPMENT MAINLY CONTROLLED BY SAAB (SWEDEN). MTC-9, THREE AXIS, 0.001 MM, 0.0025 MM, AND 0.01 MM RESOLUTION SYSTEMS. DDR MACHINE TOOLS MOST SUPERIOR MACHINE TOOLS EXHIBITED BY BLOC PARTICIPANTS.

HUNGARY: DISPLAYED A NUMBER OF TWO AXIS CONTINUOUS PATH TURRET LATHES WITH STANDARD 0.002 MM RESOLUTION WEST GERMAN NC CONTROL SYSTEMS (BOSCH 800).

POLAND: EXHIBITED NC MILLING AND TURNING MACHINES. SOME OF THE TWO AXIS CONTINUOUS PATH CONTROL SYSTEMS ON THEIR TURNING EQUIPMENT UNCLASSIFIED

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WAS THEIR OWN DESIGNED "NUMBEROBLOK)" NC SYSTEMS. IN ADDITION, SOME OF THEIR DISPLAYS OF CONTOURING EQUIPMENT UTILIZED TWO AND THREE AXIS SAAB NC UNITS. AN INTERESTING ASPECT DEVELOPED IN DISCUSSION WITH POLISH TECHNICIAN WAS COOPERATIVE (LICENSING) ARRANGEMENT EXISTING BETWEEN POREBA (POLAND) AND SMT (SWEDEN), BUILDER OF MACHINE TOOLS AND NC EQUIPMENT (SEE PARA 2 ABOVE).

CSSR: AS INDICATED ABOVE, CSSR DISPLAYED CNC SYSTEM USING

DIGITAL EQUIPMENT PDP-8M COMPUTER. SYSTEM WAS CONTROLLING STANDARD HORIZONTAL ENGINE LATHE. CSSR ALSO DISPLAYED POINT TO POINT DRILL WITH PLESSY NC AND TRACER CONTROLLED VERTICAL TURRET LATHES. CSSR HANNOVER EXHIBITS MUCH MORE LIMITED THAN EXTENSIVE DISPLAY OF EQUIPMENT AT BRNO.

ROMANIA: DISPLAYED A TWO AXIS CONTINUOUS PATH MILLING MACHINE EQUIPPED WITH THEIR OWN TWO AXIS, HARDWIRED CONTINUOUS PATH NC WITH RESOLUTION RANGE OF 0.01 MM TO 0.001 MM.

SWITZERLAND: DISPLAYED LARGE THREE AXIS NC MILLS WITH SPECS FALLING WITHIN MULTILATERAL EXPORT CONTROLS. THESE MILLS WERE BEING DISPLAYED AT HANNOVER WITH TWO AXIS WEST GERMAN NC SYSTEMS (BOSCH 800). SWISS ALSO DISPLAYED SWISS-BUILT TWO AXIS, HARDWIRED, CONTOURING NC EQUIPMENT. SWISS TECHNICIANS INDICATED THEY EXPECT TO OFFER THREE AXIS CONTOURING CONTROLLERS WITHIN NEXT YEAR.

SWEDEN: BOTH ASEA AND SAAB DISPLAYED THREE AXIS, HARD-WIRED, NC CONTOURING EQUIPMENT, AND OFFERED IN THEIR LITERATURE FOUR AXIS, HARDWIRED CONTROLLERS. SMT DISPLAYED A CNC SYSTEM AS INDICATED PARA 2 ABOVE. SWEDEN ALSO SHOWED WIDE VARIETY OF CONVENTIONAL NC TWO AXIS TURNING AND MILLING MACHINES. BROGAN

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